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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/621,003

07/16/2003

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

ANYIKIRE, CHIKAODILI E

ART UNIT

PAPER NUMBER

2621

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/621,003	<b>Applicant(s)</b> BRULS ET AL.	
	<b>Examiner</b> CHIKAODILI E. ANYIKIRE	<b>Art Unit</b> 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This Office Action is responsive to application number (10/621003) filed on July 16, 2003. Claims 1-21 are pending and have been examined.

### ***Response to Arguments***

2. Applicant's arguments filed July 10, 2008 have been fully considered but they are not persuasive.

The applicant argues that Hosono is silent on motion-compensated interpolation (Amendment of 7/10/2008, pg 6 lines 20-21). The examiner respectfully disagrees. When dealing with the temporal aspect of video compression; motion estimation and motion compensation typically go hand and hand and you can not have one without the other. Hosono reads on this aspect of motion-compensated interpolation. The examiner wishes for the applicant to specifically show where in the "Background of the Invention" or "Summary of Invention" the term motion-compensated interpolation is defined.

The applicant argues that Hosono fails to teach encoding a video picture by determining if a segment of a video picture can be reconstructed from at least another video picture based on motion-compensated interpolation (Amendment of 7/10/2008, pg 7 lines 8-10). The examiner respectfully disagrees. As explained about the Hosono discloses finding a prediction between two distinct pictures and therefore teaches motion-compensated interpolation.

The applicant argues that Hosono does not teach encoding the segment if the segment cannot be reconstructed. The examiner respectfully disagrees. The applicant does not explain what he means by "if the segment cannot be reconstructed". The examiner concludes the prediction pictures in Hosono do not meet the criteria as expressed in col 5 lines 54-59 and therefore are encoded.

The applicant argues Hosono fails to teach reconstructing a missing segment from motion-compensated interpolation applied to at least another video picture. The examiner respectfully disagrees. The B-picture is formed through motion compensation (col 8 lines 30-40).

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5<sup>th</sup> ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

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In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.

... a signal does not fall within one of the four statutory classes of Sec. 101.

... signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101.

Claims 17 - 19 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 17-18 defines control software embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed control software can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim 19 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject as follows. Claim 19 define an electronic video content information, i.e. signal, with descriptive material. While "functional descriptive material"

may be claimed as a statutory product (i.e., a "manufacture") when embodied on a tangible computer readable medium, the electronic video content information embodying that same functional descriptive material is neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of USC 101. Rather, "signal" is a form of energy, in the absence of any physical structure or tangible material.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Hosono (US 5,796,438).

As per **claims 1, 5, and 18**, Hosono discloses a method and electronic device of encoding a video picture, the method comprising:

for a segment of the video picture determining if the segment can be reconstructed from at least another video picture based on motion-compensated interpolation applied to the other video picture (Fig 9, Col 8 Ln 30-40; the figure shows

predictive images that would be used as a reference frame to serve as the other video picture such as I or P3);

if the segment cannot be reconstructed, encoding the segment (Col 8 Ln 30-40; since the segment can not be reconstructed a prediction difference was created and encoded to be transmitted to the decoder) and

otherwise skipping the segment (Col 5 Ln 54-59; the disclosure explains a process of detecting a motion vector equal to zero and therefore skipping the macroblock).

As per claims **2, 6, 10, and 14**, Hosono discloses the method of claim 1, 5, 9, and 13 wherein the segment comprises a macroblock (Col 5 Ln 54-59; the skip-macroblock is a process that is focused on manipulating the macroblocks during an encoding and decoding process).

As per **claim 3, 7, 11, and 15**, Hosono discloses the method of claim 1, 5, 9, and 13 wherein the encoding comprises using a coding scheme compliant with one of ISO and ITU video compression standards (Col 2 Ln 30-39).

As per **claim 4, 8, 20, and 21**, Hosono discloses the method of claim 3 and 7 wherein the coding scheme complies with MPEG-2 and wherein the determining comprises:

decoding an encoded B-picture (Fig 9, B; Col 4 Ln 32-39 and Col 5 Ln 54-56; the prior art discloses the decoding macroblocks especially B-picture);

generating a further picture using motion-compensated interpolation applied to the other video picture (Col 8 Ln 30-40; the prior art discloses motion-compensated interpolation);

determining a difference per macroblock between the decoded B-picture and the further picture (Col 8 Ln 30-40; the prior art discloses calculating a difference of the macroblocks especially B-picture); and

evaluating the difference under control of a consistency measure of motion vectors associated with the further picture (Col 5 Ln 54-59 and Col 8 Ln 30-40; the prior art discloses calculating motion vectors).

As per **claims 9, 13, and 17, and 19** Hosono discloses a method of decoding an encoded video picture (Fig 9, 49 and 50), the method comprising:

determining if a segment of the picture is missing (Col 4 Ln 32-39 and Col 5 Ln 54-59; the prior art clearly discloses the skipping macroblock condition and teaching the condition where decoding is used and would detect a skipping macroblock by examining the macroblocks); and

if the segment is missing, reconstructing the segment from motion-compensated interpolation applied to at least another video picture (Col 8 Ln 30-40; the prior art disclose using motion compensation on B-pictures).

As per **claims 12 and 16**, Hosono discloses the method of claim 10 and 14, wherein:



decoding the picture comprises using an MPEG-2 skipped-macroblock condition (Col 4 Ln 32-39 and Col 5 Ln 54-62); and

writing data, generated by the motion-compensated interpolation to reconstruct the macroblock, over further data generated under the skipped-macroblock condition (Col 8 Ln 30-40).

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIKAODILI E. ANYIKIRE whose telephone number is (571)270-1445. The examiner can normally be reached on Monday to Friday, 7:30 am to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272 - 7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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